Interleukin 6 and Matrix Metalloproteinase 8 in obesity

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Introduction:
Obesity is characterized by an excess of adipose tissue. It is recognized as a low-grade chronic inflammation state characterized by increased serum levels of acute phase proteins such as interleukins (ILs) and cytokines. IL-6 is a pro-inflammatory cytokine, which is involved in the regulation of lipid metabolism associated with obesity and inflammation. However, IL-6 may also play an anti-inflammatory role. Matrix metalloproteinases (MMPs) participate in several physiological processes such as remodeling of extracellular matrix, healing, angiogenesis and apoptosis. A dual role for MMP-8 has been described, MMP-8 plays a role in the development of the inflammatory response but appears to play an anti-inflammatory role during recovery and may be crucial for this process.
Objectives:
The aim of this study is to determine the IL-6 and MMP-8 levels in individuals with different body fat percentage (BF%).
Methods:
The participants ($n = 41$; 26-65 years) were distributed in 3 groups according to BF% by dual-energy x-ray absorptiometry: normal weight ($n = 8$), overweight ($n = 11$) and obese ($n = 22$). The semi-quantification of IL-6 and MMP-8 in serum was performed through the slot blot technique.
Results:
The levels of MMP-8 and IL-6 were tendentially higher in the group of overweight individuals than in the normal weight group and in the obese group, but the differences were not statistically significant. There was also a moderate positive correlation between serum levels of MMP-8 and IL-6 ($p < 0.05$) and a weak correlation between IL-6 levels and the percentage of visceral fat mass.
Conclusions:
The correlation between IL-6 levels and the percentage of visceral fat mass may be related to the fact that adipose tissue is endocrine and produce numerous factors contributing to systemic inflammation. The positive correlation between serum MMP-8 levels and serum IL-6 levels may indicate that these can be stimulated by the same mechanisms in the inflammation process.